

Application No. : 09/808,469  
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**~~APPENDIX XII~~**

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### Instruction formats

~~i = instruction opcode~~  
~~a = register (r0-3, r13-16)~~  
~~b = register (r0-3, r13-16)~~  
 5 ~~e = register (r0-3, r13-16)~~  
~~h = register high (r0-r31)~~  
~~q = condition code~~  
~~u = unsigned immediate~~  
~~s = signed immediate~~

Op	Format	Instruction	Operands	Comment
0	iiiiqqssssssss	bal/beq/bne	s8	, if cc pc=(pc&0xffffffff)+(s8<<1)
	iiiiilqqssssss	bgt/bge/blt/ble	s6	, if cc pc=(pc&0xffffffff)+(s6<<1)
1	iiisssssssssss	bl	s10	, blink=pc, pc=(pc&0xffffffff)+(s10<<2)
15	2	iiiiaaabbbiibii op	a,a,b	, op = sub/and/or/xor/asl/asr/lsl/
			a,b,1	, asl1/asr1/
			a,b,2	, asl2/asr2/
			0,a,b	, and.f/mul64/?/?/s_op
		iiiiiaaiiil1111 s_op	a,a	, s_op=extb/extw/sexb/sexw/
20			[a]	, j/jl/
			a,a,a	, sub.ne/i_op
		iiiiiiil11111111 i_op3		, i_op=brk/j-[blink]/st blink[op,4]/
3	iiiiiaaiuuuuuu	mov/emp	a,u6	
4	iiiiiaaiuuuuuu	add/sub/?/?	a,a,u5	
25	5	iiiiiaaahhh00hh mov	a,h	
		iiiiiaaahhh01hh add	a,a,h	
		iiiiiaaahhhlihh mov/emp	h,a	
6	iiiiiaa000iuuu	ld/st	a,[fp,-u3]	, a=mem[fp-(u3<<2)]
		iiiiiaa001iuuu	add/?	a,[fp,-u3], a=fp-(u3<<2)
30		iiiiiaaiuuuuuu	asl/asr/lsl	a,a,u5
7	iiiiiaaabbuuuu	ld	a,[b,u4]	, a=mem[b+(u4<<2)]
8	iiiiiaaabbuuuu	ldb	a,[b,u4]	, a=mem[b+u4]
9	iiiiiaaabbuuuu	ldw	a,[b,u4]	, a=mem[b+(u4<<1)]
A	iiiiiaaabbuuuu	st	a,[b,u4]	, a=mem[b+(u4<<2)]
35	B	iiiiiaaabb0uuu stb	a,[b,u3]	, a=mem[b+u3]
		iiiiiaaabbbluuu stw	a,[b,u3]	, a=mem[b+(u3<<1)]
C	iiiiiaaabbiiuuu	add/sub	a,b,u3	, a=b op u3
D	iiiiiaaauuuuuuu	ld	a,[pc,u7]	, a=mem[(pc&0xffffffff)+(u7<<2)]
E	iiiiiaaauuuuuuu	ld	a,[gp,u7]	, a=mem[gp+(u7<<2)]
40	F	iiiixxxxxxxxxx	reserved	
 <del>Other possible formats:</del>				
		iiiiiaaabb0ccc	ld	a,[b,e], a=mem[b+e]
		iiiiiaaabb1ccc	add	a,b,e, a=b+e
45		iiiiiaaauuuuuuu	add	a,pc,u7, a=(pc&0xffffffff)+(u7<<2)